

Claims:

1. A coating formulation for a substrate having abstractable hydrogen radicals, the
5 formulation including a hydrophilic polymeric component comprising at least two
polymeric species of differing molecular weights, an unsaturated hydrophilic
monomer capable of free-radical polymerisation in the presence of a radical and a
UV activatable compound capable of abstracting hydrogen radicals from the surface
10 to be coated and from a polymeric specie of the hydrophilic polymeric component so
as to initiate and promote the cross-linkage of the monomer to the surface and of the
monomer or a propagating monomer chain to a polymeric specie of the polymeric
component, and a suitable solvent.
2. A coating formulation as claimed in claim 1 wherein the unsaturated hydrophilic
monomer has at least two acrylate functional groups.
- 15 3. A coating formulation as claimed in claim 1 and 2 wherein the at least two polymeric
species include different functional groups.
4. A coating formulation as claimed in claim 1 or claim 2 wherein the polymeric
species comprise chemically different polymers.
5. A coating formulation as claimed in any one of the preceding claims wherein the
20 polymeric species comprise straight chain or branched chain polymers.
6. A coating formulation as claimed in any one of the preceding claims wherein at least
one polymeric species comprises a relatively lower molecular weight polymer and at
least one polymeric species comprises a relatively higher molecular weight polymer.
7. A coating formulation as claimed in claim 6 wherein the relatively lower molecular
25 weight polymer has molecular weight in the range of 40kDa to 100kDa and the
relatively higher molecular weight polymer has a molecular weight in the range of
100kDa to 1500kDa.

8. A coating formulation as claimed in claim 6 or 7 wherein the weight ratio of the lower molecular weight polymer to the higher molecular weight polymer is at least about 1-3: 1-2.
- 5 9. A coating formulation as claimed in any one of the preceding claims wherein the UV activatable compound is selected from any of a group that use a hydrogen abstraction mechanism to initiate polymerisation, including aryl ketones such as benzophenone, xanthone and dichlorobenzophenone.
10. A coating formulation as claimed in claim 9 wherein the UV activatable compound is benzophenone.
- 10 11. A coating formulation as claimed in any one of the preceding claims wherein the monomer for the coating formulation is acrylic acid, which has the functionality to react both with the substrate and with the polymeric specie on initiation of the hydrogen abstraction mechanism by the UV activatable compound.
- 15 12. A coating mixture for a biomedical device which has labile hydrogen radicals available for abstraction, the mixture comprising acrylic acid monomer, at least two hydrophilic polymeric species of differing molecular weight and a UV activatable compound capable of abstracting labile hydrogen radicals from the surface to be coated and from at least one of the polymeric species so that on activation of the UV activatable compound, the components bond to the surface of the biomedical device
20 to coat it with a hydrophilic, interpenetrating matrix of polymers.
13. A coating formulation as claimed in claim 12 wherein the UV activatable compound comprises benzophenone.
14. A coating formulation as claimed in claim 12 or 13 wherein the polymeric species
25 comprise polyvinylpyrrolidone.